

WHAT IS CLAIMED IS:

1. An atomic layer deposition method comprising:
respectively loading a plurality of substrates into a plurality of reaction cells, the plurality of reaction cells being disposed in a reaction chamber; and
alternately and repeatedly applying various vapor substances onto each substrate such that a thin film is formed on each substrate, wherein a plurality of vapor injection pipes each injecting one of the vapor substances periodically scans over each substrate to apply the various vapor substances alternately and repeatedly onto each substrate.
2. The method of claim 1, wherein each substrate is heated using a heater disposed in the reaction chamber.
3. The method of claim 1, wherein RF power is applied to the vapor injection pipes such that plasma is generated in the reaction chamber.
4. A semiconductor device fabricating apparatus comprising:
a plurality of susceptors on which the same number of substrates are respectively mounted;
a reaction chamber isolating all the substrates on the plurality of susceptors from an exterior condition;
a plurality of vapor injection pipes disposed over the substrates, each vapor injection pipe relatively rotating with respect to the substrates and periodically applying a vapor substance onto each substrate; and
a plurality of exhausting portion each disposed near a corresponding susceptor to exhaust a remaining vapor substance out of the reaction chamber.
5. The apparatus of claim 4, wherein a vertical distance between the susceptors and the vapor injection pipes are variable.
6. The apparatus of claim 4, further comprising a ring-shaped heater disposed under the plurality of susceptors to heat the substrates.

7. The apparatus of claim 4, further comprising a partition wall separating each substrate from the others such that the vapor substance applied onto the substrate reacts with the same substrate only.
8. The apparatus of claim 4, wherein the plurality of susceptors are fixed and the plurality of vapor injection pipes rotate.
9. The apparatus of claim 8, further comprising a position controller controlling the rotation speed of the plurality of vapor injection pipes.
10. The apparatus of claim 4, wherein the plurality of vapor injection pipes are fixed and the plurality of susceptors rotate.
11. The apparatus of claim 10, further comprising a position controller controlling the rotation speed of the plurality of susceptors.
12. The apparatus of claim 10, wherein RF power is applied to the plurality of vapor injection pipes to activate the vapor substance such that plasma is generated in the reaction chamber.